AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A system that facilitates watermarking digital media, comprising:

a mark generator component that utilizes, at least in part, biased, randomized statistics to determine at least one mark value for digital media by generating a plurality of areas of a two-dimensional form of the digital media each area selected to have portion exclusive of any other area and an overlapping portion encompassed by all of the areas; ~~and~~

a mark embedding component that embeds the mark value into the digital media; and

a digital recording component that records the digital media containing the embedded mark value on a computer-readable storage medium.

2. (Currently amended) The system of claim 1, wherein each area comprises ~~a the biased, randomized statistics based, at least in part, on~~ randomly generated area ~~areas of a two-dimensional form of the media~~ and a random entry value for each area.

3. (Original) The system of claim 2, the random entry value of each area based, at least in part, on a user-unique key.

4. (Currently amended) The system of claim 2, the two-dimensional form of the digital media comprising a form generated by a Short-Time Fourier Transform (STFT) method applied to a time-domain audio signal.

5. (Original) The system of claim 4, the Short-Time Fourier Transform method comprising a Modulated Complex Lapped Transformation (MCLT) method.

6. (Canceled)

7. (Currently amended) The system of claim [6] 1, the mark generator component determines the mark value of overlapping areas based, at least in part, as a function of at least one selected from the group consisting of counts and signs associated with respective areas of the subset.

8. (Original) The system of claim 1, further comprising:

a noise mark generator component that embeds at least one independent noise mark value over the mark value.

9. (Original) The system of claim 8, the noise mark generator component and the mark generator component respectively generate the noise mark value and the mark value so as to be dedicated to a single entity.

10. (Original) The system of claim 1, further comprising:

a mark detection component that detects the mark value utilizing, at least in part, statistical correlation methods.

11. (Original) The system of claim 10, the mark detection component determines a unique user based, at least in part, on the statistical correlation methods correlating above a predetermined threshold level.

12. (Currently amended) The system of claim 1, the digital media comprising an audio signal.

13. (Currently amended) The system of claim 12, the mark generator component utilizes a range of audio signal frequencies from ~~approximately~~ 100Hz to ~~approximately~~ 3,000Hz from the audio signal to determine mark values.

14. (Original) The system of claim 1, the mark value comprising a logarithmic magnitude value.

15. (Currently amended) A method for facilitating digital media watermarking, comprising:

utilizing, at least in part, biased, randomized statistics to determine at least one mark value for digital media by generating a plurality of areas of a two-dimensional form of the digital media each area selected to have portion exclusive of any other area and an overlapping portion encompassed by all of the areas; ~~and~~

embedding the mark value into at least one location in the digital media; and

recording the digital media containing the embedded mark value on a computer-readable storage medium.

16. (Currently amended) The method of claim 15, utilizing the statistics to determine at least one mark value further comprising:

generating a plurality of random areas with ~~a subset of~~ the overlapping portion ~~areas~~ within [a] the two-dimensional form of the digital media;

randomly assigning an entry value to each random area utilizing a user key; and

determining the mark value at a particular location of the two-dimensional media form utilizing at least one Bernoulli parameter derived from the random area entry values.

17. (Currently amended) The method of claim 16, the two-dimensional form of the digital media comprising a form generated by a Short-Time Fourier Transform (STFT) method applied to a time-domain audio signal.

18. (Original) The method of claim 17, the Short-Time Fourier Transform (STFT) comprising a Modulated Complex Lapped Transformation (MCLT) method.

19. (Original) The method of claim 16, determining the mark value further comprising:

determining a number of random areas containing the particular location;

determining a number of random areas containing the particular location with a first particular entry characteristic;

determining a number of random areas containing the particular location with a second particular entry characteristic;

calculating a Bernoulli parameter based, at least in part, on the first and second particular entry characteristics and a bias value; and

selecting the mark value based on the Bernoulli parameter.

20. (Currently amended) A ~~The~~ method ~~of claim 19,~~ for facilitating media watermarking, comprising:

utilizing, at least in part, biased, randomized statistics to determine at least one mark value for media by generating random areas with a subset of overlapping areas within a two-dimensional form of the media, randomly assigning an entry value to each random area utilizing a user key, and determining the mark value at a particular location of the two-dimensional media form utilizing at least one Bernoulli parameter derived from the random area entry values;

embedding the mark value into at least one location in the media;

recording the media containing the embedded mark value on a computer-readable storage medium; and

determining the mark value by determining a number of random areas containing the particular location, determining a number of random areas containing the particular location with a first particular entry characteristic, determining a number of random areas containing the particular location with a second particular entry characteristic, calculating a Bernoulli parameter based, at least in part, on the first and

second particular entry characteristics and a bias value, and selecting the mark value based on the Bernoulli parameter,

wherein the Bernoulli parameter calculated utilizing at least one equation ~~selected from the group consisting of~~:

~~(a)~~ A = B, p(i,j) = drawn uniformly from (1-*p*,*p*);

~~(b) A > B, p(i,j) =~~ $\frac{p(A+bias)+(1-p)B}{A+bias+B}$ ~~; and~~

~~(c) A < B, then p(i,j) =~~ $\frac{pA+(1-p)(B+bias)}{A+bias+B}$ ~~;~~

where A denotes a number of random areas possessing the first particular entry characteristic, B denotes a number of random areas possessing the second particular entry characteristic, *p* denotes a predetermined probability variable, bias denotes the bias value, and p(i,j) denotes the Bernoulli parameter for location (i,j) within the two-dimensional form of the media.

21. (Currently amended) The method of claim 15, further comprising:

generating a first mark value for a particular location in the digital media utilizing a first user key for a user;

generating a second mark value for the particular location in the digital media utilizing a second user key for the same user; and

utilizing the combined first and second mark values as the embedded mark value for the particular location in the digital media.

22. (Original) The method of claim 16, further comprising:

detecting at least one embedded mark utilizing statistics based on a mean of each previously determined random area and a user key derived from entry values of the random areas; and

determining user-specific data derived from the embedded mark.

23. (Original) The method of claim 22, detecting the embedded mark further comprising:

decoding a first embedded mark while treating a second embedded mark as interference;

decoding the second embedded mark while treating the first embedded mark as interference; and

declaring a particular user mark exists when statistics indicate a value greater than a predetermined threshold value.

24. (Currently amended) The method of claim 15, the digital media comprising an audio signal.

25. (Currently amended) The method of claim 24, embedding the mark value into the digital media further comprising:

limiting the mark value embedding locations to a range of audio signal frequencies from ~~approximately~~ 100Hz to ~~approximately~~ 3,000Hz in the audio signal.

26. (Canceled)

27. (Canceled).

28. (Currently amended) A computer readable storage medium having stored thereon computer executable components of the system of claim 1.

29. (Currently amended) A computing device employing the method of claim 15 comprising at least one computing environment selected from the group consisting of a computer, a server, and a handheld electronic device.

30. (Currently amended) A computing device employing the system of claim 1 comprising at least one computing environment selected from the group consisting of a computer, a server, and a handheld electronic device.

31. (Currently amended) A method for facilitating media watermarking, comprising:

utilizing, at least in part, biased, randomized statistics to determine at least one mark value for media by generating random areas with a subset of overlapping areas within a two-dimensional form of the media, randomly assigning an entry value to each random area utilizing a user key, and determining the mark value at a particular location of the two-dimensional media form utilizing at least one Bernoulli parameter derived from the random area entry values;

embedding the mark value into at least one location in the media;

recording the media containing the embedded mark value on a computer-readable storage medium; and

determining the mark value by determining a number of random areas containing the particular location, determining a number of random areas containing the particular location with a first particular entry characteristic, determining a number of random areas containing the particular location with a second particular entry characteristic, calculating a Bernoulli parameter based, at least in part, on the first and second particular entry characteristics and a bias value, and selecting the mark value based on the Bernoulli parameter,

wherein the Bernoulli parameter calculated utilizing at least one equation

$$A > B,\ p(i,j) = \frac{p(A+bias)+(1-p)B}{A+bias+B};$$

where A denotes a number of random areas possessing the first particular entry characteristic, B denotes a number of random areas possessing the second particular entry characteristic, p denotes a predetermined probability variable, bias denotes the bias value, and $p(i,j)$ denotes the Bernoulli parameter for location (i,j) within the two-dimensional form of the media.

32. (New) A method for facilitating media watermarking, comprising:

utilizing, at least in part, biased, randomized statistics to determine at least one mark value for media by generating random areas with a subset of overlapping areas within a two-dimensional form of the media, randomly assigning an entry value to

each random area utilizing a user key, and determining the mark value at a particular location of the two-dimensional media form utilizing at least one Bernoulli parameter derived from the random area entry values;

embedding the mark value into at least one location in the media;

recording the media containing the embedded mark value on a computer-readable storage medium; and

determining the mark value by determining a number of random areas containing the particular location, determining a number of random areas containing the particular location with a first particular entry characteristic, determining a number of random areas containing the particular location with a second particular entry characteristic, calculating a Bernoulli parameter based, at least in part, on the first and second particular entry characteristics and a bias value, and selecting the mark value based on the Bernoulli parameter,

wherein the Bernoulli parameter calculated utilizing at least one equation

$$\text{A} < \text{B}, \text{ then } \text{p(i,j)} = \frac{pA + (1-p)(B + bias)}{A + bias + B};$$

where A denotes a number of random areas possessing the first particular entry characteristic, B denotes a number of random areas possessing the second particular entry characteristic, p denotes a predetermined probability variable, bias denotes the bias value, and p(i,j) denotes the Bernoulli parameter for location (i,j) within the two-dimensional form of the media.